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**A revision of *Geostiba* of the Western Palaearctic region. XX.
Four new species from Turkey and Albania, and additional
records
(Coleoptera: Staphylinidae: Aleocharinae)**

V. ASSING

A b s t r a c t : Four species of *Geostiba* THOMSON from Turkey and Albania are described and illustrated: *Geostiba (Tropogastrosipalia) devia* nov.sp. (Turkey: Bolu), *G. (T.) kazika* nov.sp. (Turkey: Çanakkale, Balıkesir), *G. (T.) extensicollis* nov.sp. (Turkey: Bursa), and *G. (Sibiota) polisitica* nov.sp. (central Albania: Librazhd). Additional records are reported for seven species. Supplements to a recently published key to the *Geostiba* species of the Eastern Mediterranean, including the Caucasus region and Iran, are provided. At present, 173 species in five subgenera are known from this region.

K e y w o r d s : Coleoptera, Staphylinidae, Aleocharinae, *Geostiba*, Palaearctic region, Turkey, Albania, taxonomy, new species, new records, key to species.

1. Introduction

According to recent revisions, the *Geostiba* fauna of the Eastern Mediterranean east of Italy, including the Caucasus region and Iran, previously comprised 169 species in five subgenera: *Geostiba* (two species), *Sibiota* CASEY (40 species), *Sipalotricha* SCHEERPELTZ (37 species), *Tropogastrosipalia* SCHEERPELTZ (88 species), and *Typhlusida* CASEY (2 species) (see ASSING 2009 and references therein). An updated key to the species of the region defined above and a comprehensive catalogue are provided by ASSING (2009).

In the meantime, new material has become available through three recent field trips to Turkey and Albania in spring 2010, one of them conducted to northwestern Turkey by Volker Brachat (Geretsried) and Heinrich Meybohm (Großhansdorf), one to northern Turkey by the author, and one to central and southern Albania by Michael Schülke (Berlin), David Wrase (Berlin), and the author. Unsurprisingly, this material again included four new species, which raises the number of species known from the region outlined above to 173. The country with – by far – the highest diversity is Turkey, from where 76 species have been recorded; 71 of them are exclusively known from Turkish territory.

2. Material and methods

The material referred to in this study is deposited in the following public institutions and private collections:

MNHUB..... Museum für Naturkunde der Humboldt-Universität Berlin (J. Frisch)

OÖLL..... Oberösterreichisches Landesmuseum/Biologiezentrum Linz (F. Gusenleitner)

cAss..... author's private collection

cFel private collection Benedikt Feldmann, Münster

The morphological studies were carried out using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena). For the photographs a digital camera (Nikon Coolpix 995) was used.

Head length was measured from the anterior margin of the clypeus to the posterior margin; elytral length was measured along the suture from the apex of the scutellum to the posterior margin of the elytra, and the length of the median lobe of the aedeagus from the apex of the ventral process to the base of the capsule.

3. Species descriptions and additional records

Geostiba (Tropogastrosipalia) winkleriana PACE 1996

Material examined: Albania: 1 ex., Korçë, 37 km W Korçë, Mali i Ostrovikës, 40°40'N, 20°21'E, 1340 m, beech forest margin, beech litter and fern roots sifted, 26.V.2010, leg. Assing (cAss).

Geostiba winkleriana was previously known only from the type locality ("Tomor: Kulmak") in central Albania (ASSING 2005).

Geostiba (Tropogastrosipalia) kastamonuensis PACE 1983

Material examined: Turkey: 7 exs., Kastamonu, 37 km SE Kastamonu, 15 km N Tosya, Ilgaz geçidi, 41°08'N, 34°04'E, 1660 m, litter under pine trunk sifted, 23.III.2010, leg. Assing (cAss); 16 exs., same data, but sifted from the nest of *Formica* sp. (MNHUB, cAss, cFel); 1 ex., Kastamonu, 48 km SW Kastamonu, ca. 30 km S Araç, 41°07'N, 33°20'E, 1690 m, fir forest, under bark of fir trunks, 24.III.2010, leg. Assing (cAss).

Most of the above material was collected close to the locality where numerous specimens were found in the previous year (ASSING 2009). Once again, most specimens were sifted from a *Formica* nest.

Geostiba (Tropogastrosipalia) heliophila ASSING 2009

Material examined: Turkey: 129 exs., Kastamonu, 40 km NW Kastamonu, NE Azdavay, W Yeşilpınar, 41°42'N, 33°28'E, 1090 m, calcareous SW-slope, under stones, 22.III.2010, leg. Assing (MNHUB, cAss, cFel); 20 exs., Kastamonu, ca. 65 km W Kastamonu, 20 km W Eflani, 41°28'N, 33°13'E, 1090 m, calcareous arable land, under stones, 25.III.2010, leg. Assing (cAss).

This very recently described species was previously known only from the type locality.

***Geostiba (Tropogastrosipalia) arganthonia* PACE 1983**

Material examined: Turkey: 1 ex., Bursa, Elmalı, 40°30'33"N, 29°53'32"E, 1000 m, 20.IV.2010, leg. Brachat & Meybohm (cAss).

Geostiba arganthonia was previously known only from Istanbul (ASSING 2000b, 2009).

***Geostiba (Tropogastrosipalia) devia* nov.sp. (Figs 1-6)**

Type material: Holotype ♂: "TR [16a] - Bolu, 26 km S Bolu, N Seben, 1410 m, 40°29'30"N, 31°35'45"E, grassy slope, sifted, 27.III.2020, V. Assing / Holotypus ♂ *Geostiba devia* sp. n. det. V. Assing 2010" (cAss). Paratypes: 35 exs.: same data as holotype (cAss, OÖLL); 14 exs.: "TR [16] - Bolu, 26 km S Bolu, N Seben, 1410 m, 40°29'30"N, 31°35'45"E, grassy slope, u. stones, 27.III.2020, V. Assing" (cAss, OÖLL); 8 exs.: "TR [19] - Bolu, 31 km SSE Bolu, 40°27'58"N, 31°48'49"E, 1340 m, calcareous pasture, 28.III.2020, V. Assing" (cAss); 1 ex.: "TR [19a] - Bolu, 31 km SSE Bolu, 40°27'58"N, 31°48'49"E, 1340 m, calcareous pasture, 31.III.2020, V. Assing" (cAss).

Description: Body length 2.3-2.9 mm. Habitus as in Fig. 1. Coloration variable: body reddish to reddish-brown, with the head usually slightly darker than head and pronotum and the abdomen more or less extensively infusate (ranging from only segments VI-VII blackish in pale-coloured specimens to practically all of abdomen blackish in dark-coloured specimens); legs yellowish; antennae pale-brown, with the bases more or less extensively yellowish.

Head weakly oblong; punctation extremely fine, barely noticeable; microsculpture somewhat variable, usually shallow, occasionally almost obsolete. Eyes small, less than half as long as postocular region in dorsal view (Fig. 2).

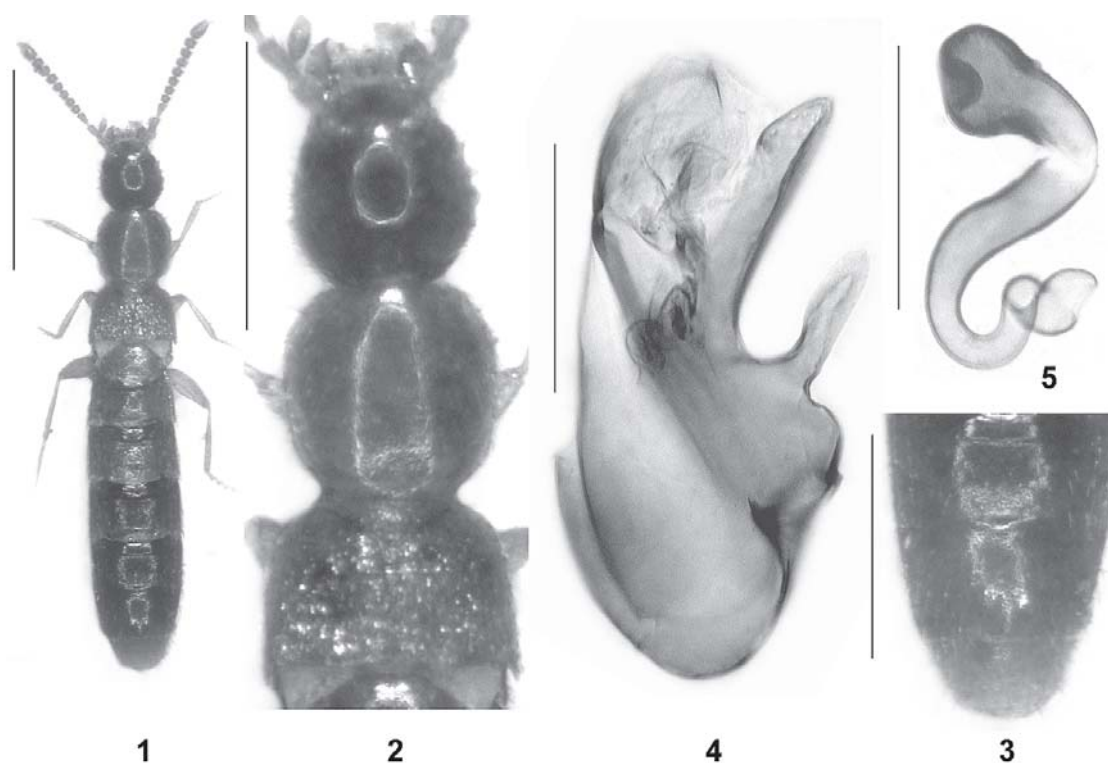
Pronotum approximately as wide as long and usually 1.15-1.20 times as wide as head (Fig. 2), with very weakly pronounced sexual dimorphism; punctation extremely fine, barely noticeable; microreticulation similar to that of head or slightly more pronounced.

Elytra with moderately pronounced sexual dimorphism, approximately half as long as pronotum (Fig. 2); microsculpture very shallow, less distinct than that of head and pronotum. Hind wings absent.

Abdomen slightly wider than elytra; punctation very fine and sparse; microreticulation distinct, but shallow; posterior margin of tergite VII without palisade fringe; anterior tergites without, tergite VII with sexual dimorphism; posterior margin of tergite VIII convex in both sexes.

♂ (with fully developed secondary sexual characters): pronotum very weakly produced posteriorly, posterior margin almost truncate in the middle and laterally straight to indistinctly sinuate (Fig. 2); elytra with distinctly granulose punctation and with very shallow transverse impression, but without other modifications (Fig. 2); anterior abdominal tergites unmodified; tergite VII at posterior margin with pair of short and not very sharp carinae (Fig. 3); posterior margin of sternite VIII convex; median lobe of aedeagus approximately 0.24 mm long, shaped as in Fig. 4.

♀: pronotum with almost regularly and broadly convex posterior margin; elytra with fine, non-granulose punctation and without impression; tergite VII unmodified; posterior margin of sternite VIII broadly convex; spermatheca distinctive (Fig. 5).



Figs 1-5: *Geostiba devia* nov.sp. (1-4: holotype): (1) male habitus; (2) male forebody; (3) male abdominal segments VI-VIII in dorsal view; (4) median lobe of aedeagus in lateral view; (5) spermatheca. Scale bars: 1: 1.0 mm; 2-3: 0.5 mm; 4-5: 0.1 mm.

Intraspecific variation: As in other species of the subgenus *Tropogastrosipalia*, the male secondary sexual characters are subject to considerable variation. They are pronounced only in large males and may be nearly or completely absent in small males.

Etymology: The specific epithet (Latin, adjective: deviant) alludes to the modifications of the male abdominal tergite VII, which differ considerably from the usual condition in the subgenus.

Comparative notes: As can be inferred from the morphology of the primary sexual characters, the modifications of the male pronotum and elytra, as well as from the general appearance, *G. devia* undoubtedly belongs to the subgenus *Tropogastrosipalia*. It is readily distinguished from all other consubgenera known from Turkey by the peculiar modifications of the male abdominal tergite VII alone. The only other *Tropogastrosipalia* species with a pair of carinae near the posterior margin of the male tergite VII are *G. chyzeri* (EPPELSHEIM) from Slovakia and Hungary and *G. rhodopensis* PACE from the northern Rodope mountains in Bulgaria. In order to account for *G. devia*, the key in ASSING (2009) is modified as follows:

- 114 Pronotum with weak or with pronounced sexual dimorphism. ♂: pronotum (except for one species from NW-Turkey) large and oblong, in large ♂ at least 1.10 times as long as wide; median lobe of aedeagus with cristal process (e. g., Figs 36-38 in ASSING 2009). ♀: posterior margin of sternite VIII with very weakly modified marginal setae; spermatheca similar to that illustrated in ASSING (2009: Figs 7, 14, 22). Subgenus *Tropogastrosipalia* (partim). 114a

- ♂: pronotum never oblong; median lobe of aedeagus without cristal process. ♀: posterior margin of sternite VIII usually with distinctly modified marginal setae; spermatheca of different morphology. Subgenus *Sibiota* (partim).116
- 114a Pronotum with very weak sexual dimorphism. ♂: pronotum even in large ♂ approximately as long as wide, not distinctly projecting posteriad, posterior margin in the middle weakly convex to almost truncate; elytra without sutural carinae (Fig. 2); carinae of tergite VII shaped as in Fig. 3; median lobe of aedeagus as in Fig. 4. ♀: spermatheca as in Fig. 5. Turkey: Bolu.*G. devia* nov.sp.
- Pronotum with pronounced sexual dimorphism. ♂: pronotum large and oblong, in large ♂ at least 1.10 times as long as wide, distinctly projecting posteriad; elytra with sutural carinae. Absent from Turkey.115
- 115. Eyes usually approximately half the length of postocular region in dorsal view, but occasionally distinctly smaller, always with clearly more than 20 ommatidia (ASSING 2005: Figs 2-3). ♂: pronotum (in large ♂ ♂) up to 1.20-1.25 times as wide as head and distinctly elongated, up to 1.20 times as long as wide and projecting over scutellum, posterior margin weakly convex to almost truncate (ASSING 2005: Fig. 2); elytra often with more or less pronounced transverse impression, and in anterior two thirds of suture with distinctly elevated sutural carina of characteristic shape (lateral view) (ASSING 2005: Figs 2, 4); tergite VII in posterior half with pair of posteriorly converging carinae (ASSING 2005: Fig. 5); tergite VIII near hind margin generally with rudiments of such carinae (ASSING 2005: Fig. 6), in large ♂ ♂ usually projecting beyond posterior margin in the form of minute dents; median lobe of aedeagus with relatively large spear-shaped cristal process (ASSING 2005: Fig. 7). Slovakia, Hungary (ASSING 2005: Map 2).*G. chyzeri* (EPPELSHEIM)
- Eyes strongly reduced, composed of about 15 ommatidia. ♂: pronotum approximately 1.10-1.15 times as long as wide, posterior margin broadly convex (ASSING 2005: Fig. 9); elytra near apex of scutellum with weakly pronounced narrow sutural carina; tergite VII in posterior half with pair of oblique (posteriorly converging!), weakly pronounced carinae; aedeagus as in PACE (1990: Fig. 29). Bulgaria: northern Rodope mountains.*G. rodopensis* PACE



Fig. 8: Type locality of *G. devia* nov.sp.

Distribution and bionomics: As can be inferred from the restricted distributions of other Turkish representatives of the subgenus *Tropogastrosipalia*, the species is probably endemic to the region to the south of Bolu, northwestern Anatolia. The type specimens were found under stones and sifted from grass roots in two stony calcareous pastures at altitudes of 1410 and 1340 m. The type locality is illustrated in Fig. 6.

***Geostiba (Tropogastrosipalia) kazica* nov.sp.** (Figs 7-14)

Type material: Holotype ♂: "N39°43'29 E27°11'01 (13), TR Canakkale, 14.4.2010, Kurucam Tepe, 430 m, leg. Brachat & Meybohm / Holotypus ♂ *Geostiba kazica* sp. n. det. V. Assing 2010" (cAss). Paratypes: 1 ex.: same data as holotype (cAss); 3 exs.: "TR - Çanakkale (13), Kaz Dağı-Gebiet [sic], ca. 30 km NO Edremit, Kuruçam Tepe, 428 m, 14.IV.2010 / N39°43'29,2, E27°11'1,1, leg. Meybohm & Brachat" (cAss); 34 exs.: "N39°41'39 E27°08'31 (11), TR Balıkesir, 13.4.2010, Kurucam Tepe, 710 m, leg. Brachat & Meybohm" (cAss, OÖLL); 3 exs.: "TR - Balıkesir (11), Kaz Dağı-Gebiet, ca. 20 km NO Edremit, Kuruçam Tepe, 708 m, 13.IV.2010 / N39°41'39,2, E27°8'31,7, leg. Meybohm & Brachat" (cAss); 1 ex.: "N39°41'09 E27°09'33 (12), TR Balıkesir, 13.4.2010, Kurucam [sic] Tepe, 740 m, leg. Brachat & Meybohm" (cAss); 3 exs.: "N39°42'45 E27°10'23 (14), TR Canakkale, 14.4.2010, Kurucam Tepe, 600 m, leg. Brachat & Meybohm" (cAss); 2 exs.: "TR - Çanakkale (14), Kaz Dağı-Gebiet, ca. 30 km NO Edremit, Kuruçam Tepe, 604 m, 14.IV.2010 / N39°42'45,8, E27°10'23,1, leg. Meybohm & Brachat" (cAss).

Description: Body length 2.0-2.9 mm. Habitus as in Fig. 7. Coloration variable: head reddish to blackish-brown, usually somewhat darker than pronotum; pronotum and elytra bright reddish to dark-brown; more or less extensively infusate (ranging from only segment VI blackish in pale-coloured specimens to practically all of abdomen blackish in dark-coloured specimens); legs yellowish; antennae reddish to reddish-brown, with the bases more or less extensively reddish-yellow.

Head weakly oblong (Figs 8-9); punctation extremely fine, barely noticeable; microsculpture somewhat variable, usually shallow, occasionally almost obsolete or more pronounced. Eyes small (Fig. 10), approximately 1/3 the length of postocular region in dorsal view.

Pronotum approximately as wide as long and usually 1.20-1.25 times as wide as head (Figs 8-9), with pronounced sexual dimorphism (but see remarks on intraspecific variation below); punctation extremely fine, barely noticeable; microreticulation similar to that of head or slightly more pronounced.

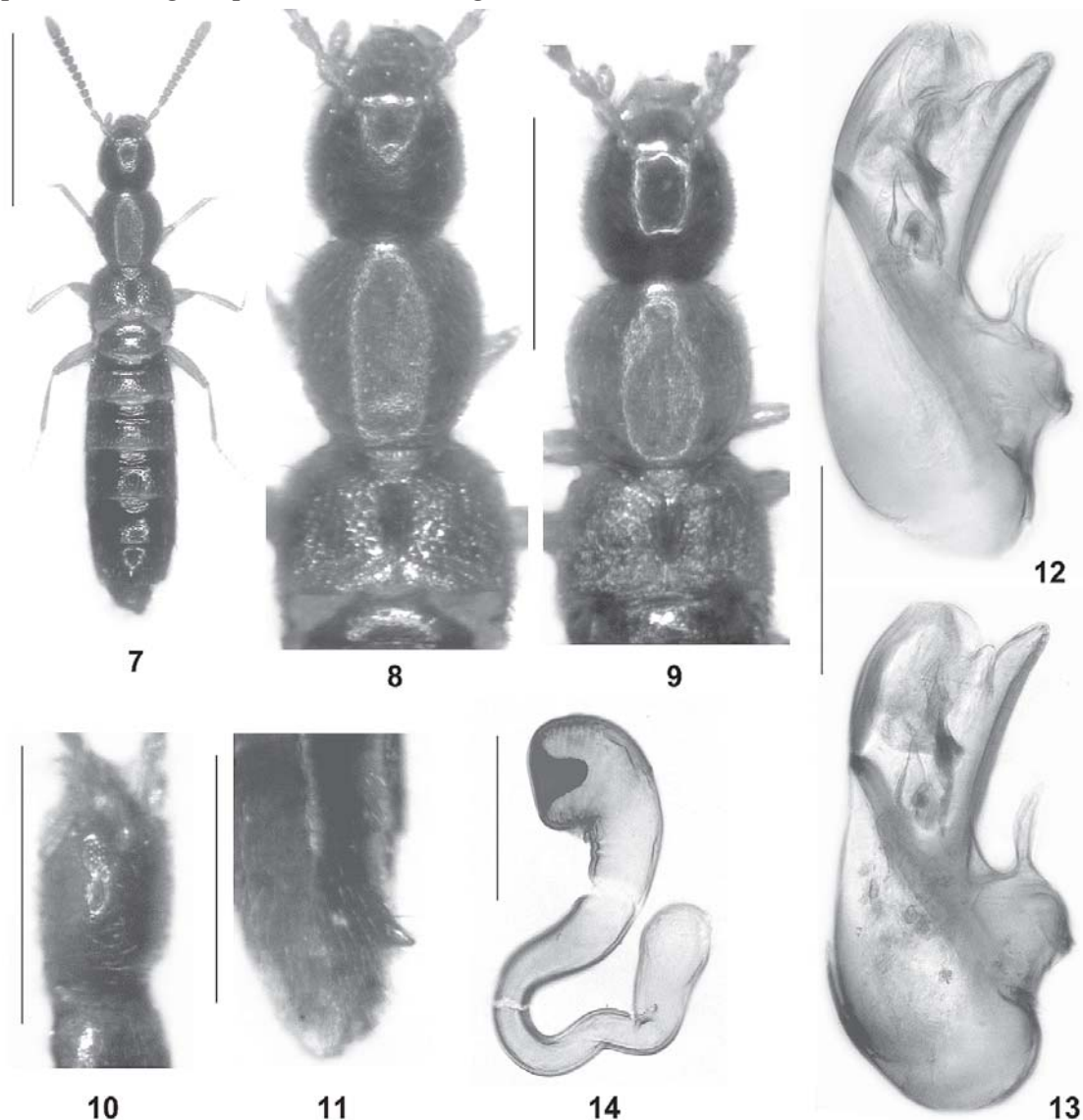
Elytra with pronounced sexual dimorphism, approximately half as long as pronotum, in ♂ with pronounced modification of pronotum even relatively shorter (Figs 8-9); microsculpture very shallow, less distinct than that of head and pronotum. Hind wings absent.

Abdomen slightly wider than elytra; punctation very fine, moderately dense on anterior tergites and sparse on posterior tergites; microsculpture present, but shallow; posterior margin of tergite VII without palisade fringe (very narrow rudiments may occasionally be visible; anterior tergites without, tergite VII with sexual dimorphism; posterior margin of tergite VIII convex in both sexes.

♂ (with fully developed secondary sexual characters): pronotum oblong, approximately 1.1 times as long as broad and produced posteriorly, posterior margin truncate to indistinctly concave in the middle, lateral margins posteriorly not sinuate, posterior angles not marked (Fig. 8); elytra with narrow and moderately elevated sutural carinae extending from apex of scutellum along approximately 2/3 of suture, punctation relatively finely

granulose, disc shallowly and extensively impressed (Fig. 8); anterior abdominal tergites unmodified; tergite VII at posterior margin with rather short, stout (lateral view), parallel-sided and apically rounded (antero-dorsal view) spine-like process (Fig. 11); posterior margin of sternite VIII convex; median lobe of aedeagus approximately 0.25 mm long, with short and slender cristal process (Figs 12-13).

♀: pronotum approximately as wide as long, posterior margin regularly and weakly convex; elytra with fine non-granulose punctation; sternite VIII with broadly convex posterior margin; spermatheca as in Fig. 14.



Figs 7-14: *Geostiba kazica* nov.sp. (7-8, 10-11: holotype): (7) male habitus; (8-9) male forebody; (10) head in lateral view; (11) male abdominal segments VI-X in lateral view; (12-13) median lobe of aedeagus in lateral view; (14) spermatheca. Scale bars: 7: 1.0 mm; 8-11: 0.5 mm; 12-14: 0.1 mm.

Intraspecific variation: The male secondary sexual characters are subject to extreme intraspecific variation. Among the total of 23 males of the type series, only two males had fully pronounced secondary sexual characters. In the vast majority of

specimens, the pronotum is of similar shape as in the females (Fig. 9), the elytral modifications are more or less reduced (shorter sutural carinae, less pronounced or absent impressions, punctation weakly granulose), and the spine-like process of the abdominal tergite VII is shorter.

E t y m o l o g y : The specific epithet (adjective) is derived from the name of the mountain range (Kaz Dağı) where the species was discovered.

C o m p a r a t i v e n o t e s : In the key in ASSING (2009), males with fully pronounced secondary sexual characters would key out at couplet 89, together with *G. turcica* BERNHAUER, from which they are distinguished by the shape of the pronotum (*G. turcica*: posterior margin broadly and distinctly concave, posterior angles pronounced, lateral margins posteriorly sinuate) and the shape of the spine-like process of the abdominal tergite VII (*G. turcica*: long, slender, erect, and apically acute). Males with weakly pronounced secondary sexual characters are distinguished from the geographically close *G. arganthonia* by the smaller body, as well as by the more slender pronotum and elytra.

D i s t r i b u t i o n a n d b i o n o m i c s : *Geostiba kazica* is probably endemic to the Kaz Dağı in western Anatolia. The type specimens were collected at relatively low altitudes (430-710 m) by sifting leaf litter and grass under shrubs close to a pine forest margin and by sifting leaf litter in mixed forests (MEYBOHM pers. comm.)

***Geostiba (Tropogastrosipalia) extensicollis nov.sp.* (Figs 15-21)**

T y p e m a t e r i a l : Holotype ♂: "N39°50'08 E28°25'31 (19), TR Bursa, 16.4.2010, Devecikonagi, 640 m, leg. Brachat & Meybohm / Holotypus ♂ *Geostiba extensicollis* sp. n. det. V. Assing 2010" (cAss). Paratypes: 1♂, 1♀: same data as holotype (cAss); 1♀: "N39°54'49 E28°28'26 (15), TR Bursa, 15.4.2010, Karaoman [recte: Karaorman], 440 m, leg. Brachat & Meybohm" (cAss); 1♂, 1♀: "TR - Bursa (15), S Mustafa Kemalpaşa, 7 km SW Karaorman, 440 m, 15.IV.2010 / N39°54'49,3 E28°28'26,7, leg. Meybohm & Brachat" (cAss).

D e s c r i p t i o n : Body length 2.3-3.1 mm. Habitus as in Fig. 15. Coloration variable: head reddish-brown to blackish-brown, usually somewhat darker than pronotum; pronotum reddish-brown to dark-brown; elytra reddish to reddish-brown; abdomen blackish-brown, usually with the anterior segments and the apex more or less extensively paler brown; legs dark-yellowish; antennae reddish-brown, with the basal 2-3 antennomeres reddish.

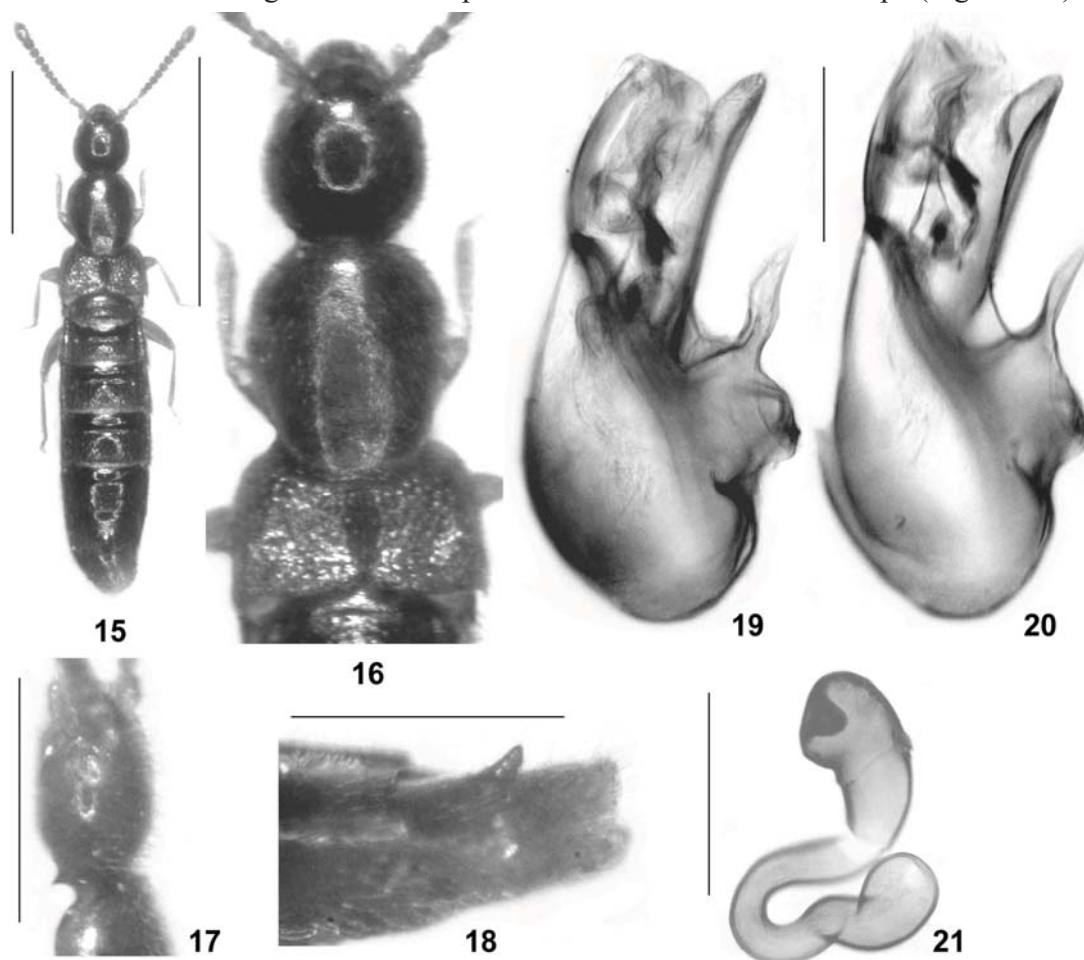
Head weakly oblong (Fig. 16); punctation extremely fine, barely noticeable; microsculpture shallow, but distinct. Eyes relatively large, more than half the length of postocular region in dorsal view (Fig. 17).

Pronotum approximately 1.2 times as wide as head (Fig. 16), with pronounced sexual dimorphism; punctation extremely fine, barely noticeable; microreticulation similar to that of head or slightly more pronounced.

Elytra with pronounced sexual dimorphism, less than half as long as pronotum (Fig. 16). Hind wings absent.

Abdomen wider than elytra; punctation with sexual dimorphism, moderately dense on anterior tergites and sparse on posterior tergites; interstices with distinct microsculpture; posterior margin of tergite VII with very narrow rudiment of a palisade fringe; anterior tergites with or without, tergite VII with sexual dimorphism; posterior margin of tergite VIII convex in both sexes.

♂ (with fully developed secondary sexual characters): pronotum oblong, approximately 1.2 times as long as broad, posteriorly produced and concealing scutellum, posterior margin truncate to indistinctly concave in the middle, lateral margins posteriorly not sinuate, posterior angles not marked (Fig. 16); elytra broadly transverse, 1.25-1.30 times as wide as pronotum, with narrow and moderately elevated sutural carinae extending from apex of scutellum almost to posterior margin of elytra, punctation granulose, interstices with very weak, barely noticeable microsculpture, disc rather deeply and extensively impressed; abdomen with moderately fine punctation; anterior abdominal tergites unmodified or with indistinct median elevations on tergites IV or III-IV; tergite VII at posterior margin with rather short, stout, suberect (lateral view), wedge-shaped (antero-dorsal view) spine-like process (Fig. 18); posterior margin of sternite VIII convex; median lobe of aedeagus with cristal process of somewhat variable shape (Figs 19-20).



Figs 15-21: *Geostiba extensicollis* nov.sp. (15-19: holotype): (15) male habitus; (16) male fore-body; (17) head in lateral view; (18) male abdominal segments VI-VIII in lateral view; (19-20) median lobe of aedeagus in lateral view; (21) spermatheca. Scale bars: 15: 1.0 mm; 16-18: 0.5 mm; 19-21: 0.1 mm.

♀: pronotum approximately as wide as long, posterior margin regularly and weakly convex; elytra less broad and less transverse than in ♂, approximately 1.2 times as wide as head, punctation fine and non-granulose, interstices with distinct microreticulation; abdomen with very fine punctation; sternite VIII with broadly convex posterior margin; spermatheca as in Fig. 21.

Intraspecific variation: In the three males examined, the degree of intraspecific variation is relatively low. In one of the male paratypes, the pronotum is slightly narrower and less produced posteriorly and the sutural carinae are slightly shorter, but in other respects the secondary sexual characters are similar to those of the holotype.

Etymology: The specific epithet (Latin, adjective) alludes to the conspicuously long male pronotum.

Comparative notes: In the key in ASSING (2009), the species would key out either at couplet 82 together with *G. heliophila* ASSING from Kastamonu or at couplet 87 together with *G. aydinica* ASSING from the Aydın Dağları, depending on whether or not median elevations are present on the anterior tergites. In order to account for *G. extensicollis*, the key is modified as follows:

- 78 ♂: abdominal tergites III and/or IV each with smooth subcircular tubercle near anterior impression. (*G. biformis* and *G. extensicollis*, in which tergites III and IV may or may not have indistinct tubercles, will key out in both alternatives.) 79
- ♂: abdominal tergites III and IV unmodified..... 84
- 82 ♂: pronotum gradually tapering posteriad, i.e., lateral margins regularly converging, not sinuate near posterior angles (Fig. 16). Species from northern or northwestern Anatolia..... 82a
- ♂: pronotum abruptly narrowed posteriad, lateral margin at least weakly sinuate near posterior angles; process of tergite VII longer, more erect, and distinctly stouter. Species from southern Anatolia 83
- 82a Body smaller and of more slender habitus (ASSING 2009: Figs 9-10). ♂: pronotum relatively smaller, posteriorly usually distinctly concave in the middle, and less oblong, 1.10-1.15 times as long as broad (ASSING 2009: Figs 9-10); elytra less broad, approximately 1.5 times as wide as pronotum; sutural carinae shorter and less elevated (ASSING 2009: Figs 9-10); tergite IV with smooth median tubercle (ASSING 2009: Figs 9-10); process of tergite VII short, acute, and suberect (ASSING 2009: Fig. 11); median lobe of aedeagus with longer and more slender cristal process (ASSING 2009: Fig. 13). ♀: spermatheca with proximal portion of capsule conspicuously transparent (ASSING 2009: Fig. 14). Kastamonu *G. heliophila* ASSING
- Body on average larger and broader (Fig. 15). ♂: pronotum relatively larger, posteriorly truncate or very weakly concave, and more oblong, approximately 1.2 times as long as wide; elytra broader and more transverse, 1.25-1.30 times as wide as pronotum (Fig. 16); sutural carinae more pronounced and almost reaching posterior margin of elytra (Fig. 16); tergite IV with or without very indistinct median elevation; process of tergite VII stouter (Fig. 18); median lobe of aedeagus with shorter cristal process (Figs 19-20). ♀: proximal portion of spermathecal capsule not conspicuously transparent. Northwestern Anatolia: Bursa *G. extensicollis* nov.sp.
- 87 ♂: pronotum (in large ♂♂) more oblong (up to 1.25 times as long as wide) and more strongly projecting posteriorly (Fig. 16; ASSING 2006: Fig. 46); elytra with more strongly elevated and long sutural carina extending to posterior elytra margin (or nearly so), with pronounced impressions, and with coarser and more distinctly granulose puncturation (Fig. 16; ASSING 2006: Figs 46, 48). Species from western or northwestern Anatolia 87a
- ♂: pronotum much less oblong and less strongly projecting posteriorly; elytra with shorter and less elevated sutural carinae not reaching posterior elytral margin, impressions, if present, shallower 88
- 87a Forebody with less pronounced microsculpture and more glossy. ♂: process of tergite VII more erect, anteriorly somewhat flattened, and in antero-dorsal view more slender and apically rounded (ASSING 2006: Figs 49-50); median lobe of aedeagus smaller, approximately 0.28 mm long and shaped as in ASSING (2006: Figs 49-51). ♀: proximal end of spermathecal capsule longer and more slender (ASSING 2006: Fig. 52). Western Anatolia (Aydın): Aydın Dağları (ASSING (2006: Map 3) *G. aydinica* ASSING

- Forebody with more pronounced microsculpture and less shiny (Fig. 16). ♂: process of tergite VII suberect, anteriorly convex in cross-section, and in antero-dorsal view wedge-shaped and apically acute; median lobe of aedeagus larger, approximately 0.32 mm long and shaped as in Figs 19-20. ♀: proximal end of spermathecal capsule bulbous and shorter (Fig. 21). Northwestern Anatolia: Bursa.....*G. extensicollis* nov.sp.

Distribution and bionomics: The type specimens were collected in two localities in the mountain range to the south of Mustafakemalpaşa in Bursa province, northwestern Anatolia, at relatively low altitudes (440 and 640 m). They were sifted from leaf litter in beech forests (MEYBOHM pers. comm.).

***Geostiba (Sibiota) oertzeni* (EPPELSHEIM 1888)**

Material examined: Turkey: 2 exs., Çankırı, 67 km SW Kastamonu, 10 km NNW Kurşunlu, 40°56'N, 33°15'E, 1560 m, sifted from roots near large snowfield, 25.III.2010, leg. Assing (cAss); 12 exs., Balıkesir, Kaz Dağı, 39°42'N, 26°54'E, 1300 m, 12.IV.2010, leg. Brachat & Meybohm (cAss).

Geostiba oertzeni is one of the most widespread species of the genus; for a distribution map see ASSING (2006).

***Geostiba (Sibiota) uhligi* PACE 1983**

Material examined: Turkey: 10 exs., Bursa, Uludağ, 40°07'N, 29°05'E, 1480 m, 17.IV.2010, leg. Brachat & Meybohm (cAss); 14 exs., Bursa, Uludağ, 40°07'N, 29°04'E, 1430 m, 17.IV.2010, leg. Brachat & Meybohm (cAss); 21 exs., Bursa, Uludağ, 40°08'N, 29°02'E, 1030 m, 17.IV.2010, leg. Brachat & Meybohm (cAss); 1 ex., Bursa, Soğukpınar, 40°05'N, 29°05'E, 1220 m, 18.IV.2010, leg. Brachat & Meybohm (cAss); 15 exs., Bursa, Kocayayla, 39°56'N, 29°16'E, 1200 m, 18.IV.2010, leg. Brachat & Meybohm (cAss).

This species is endemic to northwestern Anatolia; for a distribution map see ASSING (2001a).

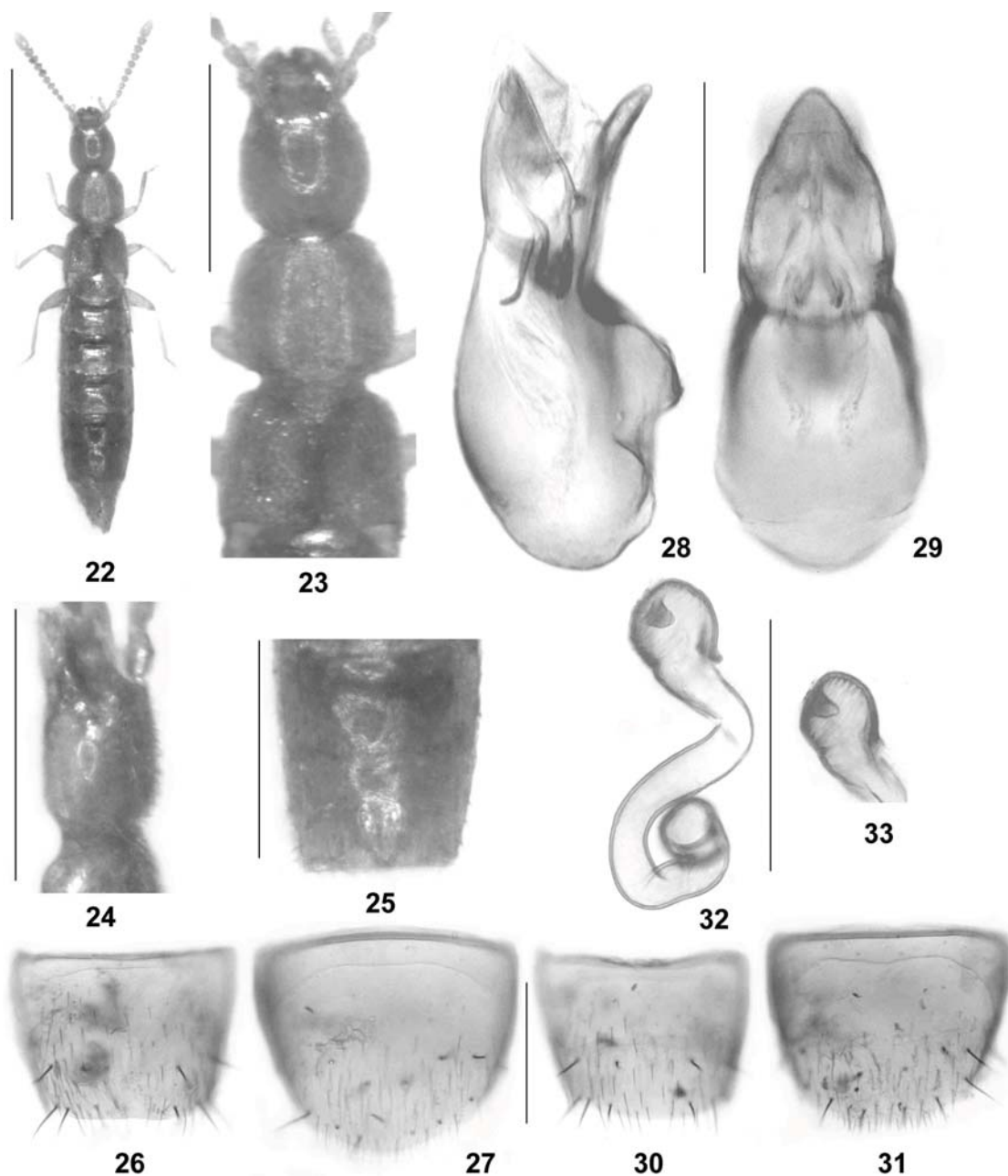
***Geostiba (Sibiota) polisitica* nov.sp. (Figs 22-33)**

Type material: Holotype ♂: "Albania [4c], Librazhd, 25 km ESE Elbasan, Mali i Polisit, 1700 m, 41°04'07"N, 20°22'23"E, 23.V.2010, V. Assing / Holotypus ♂ *Geostiba polisitica* sp. n. det. V. Assing 2010" (cAss). Paratypes: 3 ♂♂, 3 ♀♀: same data as holotype (cAss); 3 ♂♂, 3 ♀♀: "Albania [4], Librazhd, 25 km ESE Elbasan, Mali i Polisit, 1700 m, 41°04'07"N, 20°22'23"E, 23.V.2010, V. Assing" (cAss).

Description: Body length 2.3-2.9 mm. Habitus as in Fig. 22. Coloration: whole body yellowish red.

Head distinctly oblong, approximately 1.2 times as long as wide (Fig. 23); punctation extremely fine, barely noticeable; interstices with very shallow microsculpture and glossy. Eyes reduced to minute rudiments, without ommatidia and pigmentation (Fig. 24). Antenna distinctly and gradually incrassate apically, antennomere X almost twice as wide as long.

Pronotum approximately as wide as long or indistinctly transverse, 1.20-1.25 times as wide as head (Fig. 23), without sexual dimorphism; punctation extremely fine, barely noticeable; interstices with distinct microreticulation and subdued shine, clearly less glossy than head; on either side of the slightly and narrowly elevated smooth midline with shallow longitudinal impressions.



Figs 22-33: *Geostiba polisitica* nov.sp. (22-24: holotype): (22) male habitus; (23) male forebody; (24) head in lateral view; (25) male abdominal segments VI-VII in dorsal view; (26) male tergite VIII; (27) male sternite VIII; (28-29) median lobe of aedeagus in lateral and in ventral view; (30) female tergite VIII; (31) female sternite VIII; (32) spermatheca; (33) distal portion of spermathecal capsule. Scale bars: 22: 1.0 mm; 23-25: 0.5 mm; 26-27, 30-31: 0.2 mm; 28-29, 32-33: 0.1 mm.

Elytra with pronounced sexual dimorphism, 0.5-0.6 times as long as pronotum (Fig. 23). Hind wings absent.

Abdomen wider than elytra; punctation very fine and sparse, barely noticeable; interstices with shallow microreticulation; tergite VII with sexual dimorphism; posterior margin of tergite VII without palisade fringe.

♂ (with secondary sexual characters fully developed): elytra with extensive and relatively deep impressions and with pronounced sharp sutural carina extending over full

length of suture, this carina more elevated and broader anteriorly than posteriorly, punctation finely granulose, microsculpture shallow; abdominal tergite VII posteriorly with pair of posteriorly converging carinae (i.e., shaped like a V) (Fig. 25); posterior margin of tergite VIII truncate (Fig. 26); posterior margin of sternite VIII weakly and obtusely pointed in the middle (Fig. 27); median lobe of aedeagus as in Figs 28-29; apical lobe of paramere very slender.

♀: elytra without impressions and carinae, punctation very fine, non-granulose, and barely noticeable, microreticulation distinct; tergite VIII with weakly convex posterior margin (Fig. 30); posterior margin of sternite VIII convex, in the middle indistinctly concave (Fig. 31); spermatheca shaped as in Figs 32-33.

Intraspecific variation: In one of the males, the pair of carinae on the abdominal tergite VIII is missing and the elytral punctation is not distinctly granulose.

Etymology: The specific epithet (adjective) is derived from the name of the mountain range where the species was discovered.

Comparative notes: In the key in ASSING (2009), the species would key out at couplet 26 together with *G. samai* PACE from Macedonia and *G. sculpticollis* (APFELBECK) from northern Albania. In order to account for the new species, the key is modified as follows:

- 26 ♂: median lobe of aedeagus smaller and with more pronounced lateral folds (ASSING 2001b: Figs 13-14). ♀: spermatheca as in ASSING (2001b: Figs 16-17). N-Macedonia: Šar planina *G. samai* PACE
- ♂: median lobe of aedeagus larger and with less pronounced lateral folds. ♀: spermatheca of different shape. Species from Albania 26a
- 26a ♂: median lobe of aedeagus in lateral view with longer and more strongly curved ventral process (ASSING 2000a: Figs 21-22). ♀: distal portion of spermatheca distinctly dilated (ASSING 2000a: Fig. 24). N-Albania: Mirditë..... *G. sculpticollis* (APFELBECK)
- ♂: median lobe of aedeagus in lateral view with shorter and very weakly curved ventral process (Figs 28-29). ♀: distal portion of spermatheca weakly dilated (Figs 32-33). Central Albania: Librazhd: Mali i Polisit..... *G. polisitica* nov.sp.

Distribution and bionomics: The type locality is situated in the Mali i Polisit range to the southeast of Elbasan, Librazhd province (central Albania). The specimens were sifted from debris and roots at the bottom of a dolina below a large snowfield and from leaf litter near snow in an old calcareous beech forest at an altitude of 1700 m.

***Geostiba (Sipalotricha) euboica* PACE 1990**

Material examined: Turkey: 1 ex., Balıkesir, Kuruçam Tepe, 39°42'N, 27°09'E, 710 m, 13.IV.2010, leg. Brachat & Meybohm (cAss).

The known distribution of *G. euboica* ranges from Albania and western Greece to western Turkey. For a distribution map see ASSING (2006).

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Zusammenfassung

Vier Arten der Gattung *Geostiba* THOMSON aus der Türkei und Albanien werden beschrieben und abgebildet: *Geostiba (Tropogastrosipalia) devia* nov.sp. (Türkei: Bolu), *G. (T.) kazika* nov.sp. (Türkei: Çanakkale, Balıkesir), *G. (T.) extensicollis* nov.sp. (Türkei: Bursa) und *G. (Sibiota) polisitica* nov.sp. (Zentral-Albanien: Librazhd). Für sieben Arten werden weitere Nachweise gemeldet. Eine kürzlich publizierte Bestimmungstabelle der *Geostiba*-Arten des östlichen Mittelmeerraums, der Kaukasusregion und Irans wird ergänzt. Einschließlich der neu beschriebenen Arten sind derzeit 173 Arten in fünf Untergattungen aus diesem Gebiet bekannt.

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Author's address: Dr. Volker ASSING
Gabelsbergerstr. 2
D-30163 Hannover, Germany
E-mail: vassing.hann@t-online.de